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imagery analysis report

Improvements to the  
Vietnamese Air Force (S)

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## **IMPROVEMENTS TO THE VIETNAMESE AIR FORCE (S)**

### **INTRODUCTION**

1. (S/WN) This report provides an imagery-derived analysis of Soviet and Vietnamese efforts to improve the Vietnamese Air Force (VAF) from the 1979 Chinese incursion into Vietnam through August 1982. These efforts include upgrading the fighter and helicopter inventory and improving selected airfields in northern Vietnam.

2. (S/WN) The evolution of the VAF spans three distinct periods during the 1970s and 1980s. The first period was during the Vietnamese war, when the fighter inventory consisted primarily of Soviet-built FISHBED, FARMER, and FAGOT/FRESCO aircraft. By the end of the war, a large portion of this inventory was depleted. The second period began in 1975 with the communist takeover of South Vietnam at the conclusion of the war. Hundreds of US-built aircraft were absorbed into the VAF, a gain that included F-5, A-37, and A-1 fighters, UH-1 helicopters, and several types of support aircraft. However, the Vietnamese were forced to cannibalize many of these aircraft because of poor maintenance and a lack of spare parts. Approximately 75 percent of the captured aircraft have been gradually retired. From April 1975 to April 1979, the Soviets continued to provide aircraft to Vietnam, but at a relatively low level. The third period of development was stimulated by the February 1979 Chinese incursion into Vietnam. Since then, the Soviets have notably enhanced the Vietnamese fighter inventory by increasing the numbers of existing types of aircraft and by introducing new models and types of fighters and helicopters.

3. (S/WN) By the summer of 1979, FISHBEDs had replaced most of the older types of aircraft at four forward airfields between Hanoi and the China border. FITTER, MAIL, and HIND aircraft were introduced into Vietnam shortly thereafter. The overall quantity and quality of aircraft at the five northern airfields have been improved (Figure 1 and Table 1). Also, five previously abandoned airfields have been or are being reconstructed. As a result of this activity, the Vietnamese have considerably more effective offensive and defensive air power in the event of renewed hostilities with China.

### **DISCUSSION**

#### **Upgrading of Military Aircraft**

4. (S/WN) The Soviet aircraft are delivered by ship in containers to Da Nang Naval Station [redacted] The containers are then transported by truck to Da Nang Airfield, where the aircraft are assembled and tested. Finally, they are deployed primarily to the northern operational airfields. Noi Bai Airfield (item 3, Figure 1) was used for aircraft assembly; however, no containers have been observed there since 1978.

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5. (S/WN) The Soviets have introduced at least one FITTER regiment into the VAF. The first indications of FITTER-related activity in Vietnam were at Da Nang Airfield (item 6, Figure 1) on [ ] when 13 FITTER fuselage containers and 14 component containers were identified. A total of 37 assembled FITTERs, including 24 FITTER Js, one probable FITTER G, and 12 unidentified FITTER models, was observed on imagery of [ ]

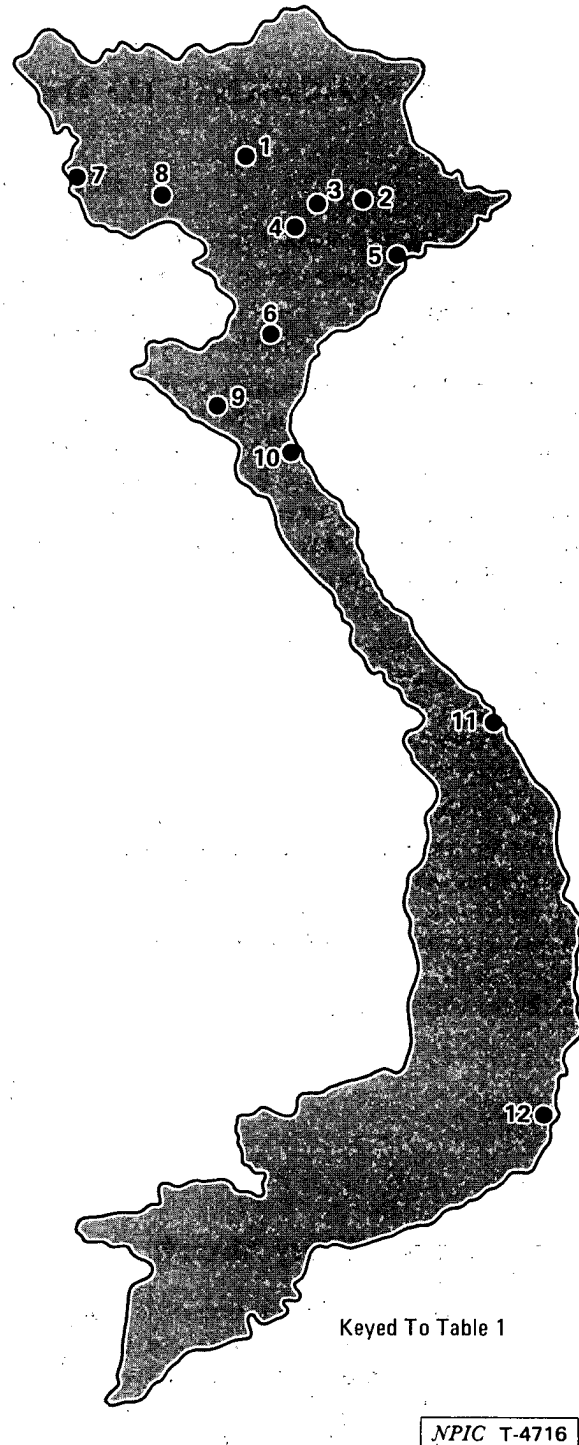
6. (S/WN) The deployment of FITTERs was first observed in Vietnam on [ ] when 12 FITTER Js were at Bai Thuong Airfield (Figure 2). By [ ] the FITTER count had increased to 37, and a high count of 43 FITTERs was observed on [ ]. Through June 1982, FITTERs were not observed at any other Vietnamese airfields. However, a probable FITTER squadron returned to Da Nang in July.

7. (S/WN) The FITTER J is the latest designated model of the FITTER series. Although the J model can be used for reconnaissance and intercept purposes, its primary function is ground attack, as it can carry a full range of Soviet ground-attack munitions. As an interceptor, the FITTER J uses infrared guided missiles. The proximity of the deployed FITTER to the Vietnamese—Chinese border and the added capabilities of the FITTER J enhance the Vietnamese defensive and offensive capabilities against the Chinese threat.

8. (S/WN) Fighter units at four other northern airfields—Yen Bai, Kep, Noi Bai, and Hai Phong/Kien An—have replaced the older FAGOT/FRESCO and FARMER aircraft with the more modern FISHBED aircraft.

9. (S/WN) In September 1977, 16 FISHBEDs were observed at Yen Bai Airfield for the first time; FARMERs and FAGOTs/FRESCOs had been previously based there. Subsequently, all 44 FARMERs were deployed south to Phu Cat Airfield [ ] for storage, and most of the 23 to 26 FAGOTs/FRESCOs were either dismantled or transferred to stor-

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**FIGURE 1. LOCATION MAP OF VIETNAMESE AIRFIELDS**

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**Table 1.**  
**Equipment and Airfield Improvements Since 1979**  
**(Items keyed to Figure 1)**

*This table in its entirety is classified SECRET/WNINTEL*

Item	Airfield Name/BE Number	Oct - Dec 75	Mar - May 82	Remarks	
1	Yen Bai [REDACTED]	44 FARMER 4 FAGOT/FRESCO	13 - 17 FISHBED 4 FRESCO	FARMER regt replaced by FISHBED unit	25X1
2	Kep [REDACTED]	16 FISHBED 31 FAGOT/FRESCO	36 FISHBED 19 FRESCO	FISHBED unit upgraded to regt strength	25X1
3	Noi Bai (formerly Phuc Yen) [REDACTED]	26 - 43 FISHBED	37 - 46 FISHBED 5 F-5 1 A-37 1 CRUSTY	Also serves as an international afld; RSBN-4N ILS	25X1
4	Hoa Lac [REDACTED]	4 HOOK 12 CAB	9 - 14 HIND* 7 - 27 HIP 3 HOOK 5 COLT 2 MESCALERO	Primary helicopter base	25X1
5	Hai Phong/Kien An [REDACTED]	4 FAGOT 28 FRESCO	9 FISHBED 10 FAGOT/FRESCO 10 - 12 HORMONE	Augmented with FISHBED in late 81; location of Vietnam's only HORMONE unit	25X1
6	Bai Thuong [REDACTED]	None	43 FITTER*	Only northern FITTER base (Runway reconst completed Dec 79); RSBN-4N ILS	25X1
7	Dien Bien Phu [REDACTED]	None	None	Upgraded with PSP; TALL RODS antenna	25X1
8	Na San [REDACTED]	None	None	Upgraded with PSP; runway extended	25X1
9	Quan Lang [REDACTED]	None	None	Upgraded with PSP; ground scarring for parking aprons	25X1
10	Vinh [REDACTED]	None	9 COLT	Upgraded with PSP; 6 new U-shaped revetments	25X1
11	Da Nang [REDACTED]	13 CARIBOU 13 UH-1 7 CHINOOK 2 CRATE 1 CODLING 1 HIP	23 FISHBED 9 FRESCO 6 FAGOT 1 CURL 2 CUB (Soviet) 1 COLT 1 HIP 1 MESCALERO	Aircraft assembly and transshipment area for Soviet-provided military equipment arriving in Vietnam; storage fac for ex-US aircraft; maint depot for VAF	25X1
12	Cam Ranh Bay [REDACTED]	None	2 BEAR D (Soviet) 2 BEAR F Variant (Soviet) 4 MAIL* 14 - 15 UH-1 8 - 9 HIP	Soviet staging base for South China Sea recon	25X1

\* Added to Vietnamese inventory since 1979

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age depots in the south. Four derelict FRESCO's have remained at Yen Bai since 1978, and 13 to 17 FISHBEDs have remained active.

10. (S/WN) From May through July 1979, at least 70 FISHBED containers were delivered to Da Nang Naval Station, by Soviet merchant ships. From late 1978 through early 1979, a complement of only 15 to 18 FISHBEDs and 20 to 25 FAGOTs/FRESCO's was stationed at Noi Bai Airfield. By July 1979, disassembled FAGOTs/FRESCO's had been observed near the airfield at a support area. On [ ] 44 FISHBEDs were observed; no FAGOTs/FRESCO's were visible.

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11. (S/WN) Five FISHBEDs were observed for the first time at Hai Phong/Kien An Airfield in December 1979. However, this was a temporary deployment. FISHBEDs were not observed there again until September 1981, when nine were present. Subsequent 1982 coverage confirmed the continued presence of FISHBED aircraft through [ ]

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12. (S/WN) FISHBEDs have been at Kep Airfield since 1975. Increases in the number of FISHBED were observed in 1981, with a high count of 36 in December. Prior to that time, 15 to 20 FISHBEDs were usually present.

13. (S/WN) The Soviets have further enhanced the Vietnamese ground-attack capability by adding HIND helicopters to the inventory at Hoa Lac Airfield (Figure 3). Prior to 1977, the usual complement of aircraft at Hoa Lac consisted of three to six HOOK helicopters and 12 CAB aircraft, indicating that the airfield was used for transport activities. In July 1977, six HIP C helicopters were deployed there for the first time. In April 1980, HIND were observed for the first time in Vietnam at Da Nang Airfield. In August 1980, 13 HINDs were introduced at Hoa Lac, and by October 1980, the number of HIP Cs had been increased by 20. Hoa Lac is now the primary helicopter base in Vietnam.

14. (S/WN) Hai Phong/Kien An Airfield has been the home base for a FAGOT/FRESCO fighter unit since 1975. In May 1979, five HORMONE helicopters were observed for the first time in Vietnam at Hai Phong/Kien An. By January 1981, 12 HORMONEs were present. The HORMONE could provide an airborne antisubmarine warfare (ASW) capability in the Hai Phong/Gulf of Tonkin area (Figure 4).

15. (S/WN) Three unassembled amphibious MAIL aircraft were observed at Cam Ranh Bay Airfield on [ ] a fourth MAIL fuselage was observed there. They were assembled by November 1981 and have since been operating in an ASW function at Cam Ranh Bay Airfield (Figure 5). One MAIL and two HORMONEs on a probable ASW training mission were observed at Da Nang Airfield in early July 1982.

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16. (S/WN) Twelve containers were observed adjacent to the MAIL fuselages at Cam Ranh Bay Airfield on [ ] These containers resemble the AS-4/KITCHEN air-to-surface missile container in size and configuration. However, several factors indicate that these containers were probably used to ship MAIL components. No AS-4 missiles, missile-handling/support equipment, or missile-storage facility has been observed. Furthermore, the identification of the shipping containers coincided with the delivery of the MAILs, and the containers were subsequently stored and have remained in an open, unsecured area adjacent to the MAIL assembly area.

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**SECRET****Airfield Reconstruction**

17. (S/WN) A pattern of airfield reconstruction has been observed at five previously abandoned northern airfields south and west of Hanoi: Bai Thuong, Vinh, Na San, Quan Lang, and Dien Bien Phu. All reconstruction has taken place since February 1979. Four of the airfields were resurfaced with pierced-steel planking (PSP); however, Bai Thuong was reconstructed with concrete. The use of PSP at four of the airfields and the locations of the airfields suggest that most of them will serve as logistical support bases.

18. (S/WN) Bai Thuong Airfield was abandoned from October 1975 through April 1979. In April, the center portion of the runway was being graded. By December 1979, the 2,800- by 49-meter concrete runway had been completely reconstructed, the parallel taxiway had been regraded, and a POL storage area had been installed. In May 1981, FITTERs were based at this airfield, and an RSBN-4N instrument landing system (ILS) was installed. Construction was still in progress on the parking areas and support facilities in June 1982.

19. (S/WN) Vinh Airfield was abandoned between April 1975 and March 1979. During this period, the airfield was in disrepair. Between March and July 1979, the 2,057- by 60-meter runway was resurfaced with PSP, and a parallel taxiway made of PSP was constructed. In August 1981, expansion was continuing in the support areas, and five U-shaped revetments were under construction. A deployment of COLT aircraft was observed there in January 1982. At that time, a sixth U-shaped revetment was under construction, but none of the revetments had been occupied. The dimensions of the revetments and the presence of exhaust deflectors suggest that jet fighter-type aircraft, such as the FISHBED, may be parked in the revetments in the future. Revetments of this type (Figure 6) have not been observed at any other Vietnamese airfield.

20. (S/WN) Na San and Quan Lang Airfields had been abandoned and overgrown with vegetation since 1975. By June 1980, the laterite runway at Na San had been resurfaced with PSP and extended 800 meters; it now measures 2,400 by 42 meters. The orientation was also slightly modified to a west-northwest/east-southeast direction. Parking aprons were under construction in February 1981. Between July 1979 and June 1980, the 1,741- by 31-meter PSP runway at Quan Lang was extended and now measures 2,001 meters. The presence of a construction support camp and ground scarring for parking aprons indicated that more construction would take place. However, by May 1982, no additional construction had taken place at Quan Lang, and the runway was not in use.

21. (S/WN) Dien Bien Phu Airfield was abandoned in 1975. In June 1978, a CRATE aircraft was observed here. A TALL RODS antenna and three possible support units for a SQUARE FOUR antenna were observed on [redacted] In February 1981, the 1,625- by 25-meter runway was being resurfaced with PSP, and three antiaircraft artillery positions were occupied. Construction was continuing in June 1982. Since improvements were initiated, aircraft have not been observed at this facility.

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**Imagery Analyst's Comments**

22. (S/WN) The efforts of the VAF continue to be directed against the Chinese threat along the northern border and the coast. The atypical deployment of the FITTER aircraft may indicate a future deployment pattern for new types of high-performance aircraft. Three factors are evident: first, the runway at Bai Thuong Airfield was completely reconstructed with concrete; second, the

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RSBN-4N ILS system, used with high-performance aircraft such as the FLOGGER and FITTER, was installed at the airfield; third, Bai Thuong is strategically located in a relatively safe position away from the border and behind the surface-to-air missile belt in the north. This location helps protect Vietnam's most sophisticated aircraft from surprise attack while allowing them to defend Hanoi's southern and eastern flanks. Also, the presence of HORMONE and MAIL aircraft indicates a concern with an attack from the sea. All of these factors as well as the acquisition of the HIND helicopters reveal an apparent determination of the Hanoi government to resist the Chinese threat with the most sophisticated means of warfare available.

23. (S/WN) The future of the VAF is almost entirely contingent upon Soviet support. Although Soviet-developed aircraft have always been the mainstay of the VAF, the Vietnamese have not developed the capability to perform major aircraft maintenance or to manufacture spare parts.

24. (S/WN) Based on the recent increases in the Soviet provision of aircraft to Vietnam and the reconstruction of Vietnamese airfields, it is not unreasonable to anticipate future deliveries. These deliveries could include types and models of aircraft already in Vietnam, for example, FISHBED, FITTER, HIND, and HORMONE, as well as aircraft which would be new to the VAF. Evidence suggests that FLOGGER and HIND D aircraft may be provided to Vietnam. Over the past two and a half years, numerous sources have reported observations of FLOGGER aircraft in Vietnam.<sup>1</sup> However, by late August 1982, no FLOGGER aircraft had been observed. Collateral sources indicate that Vietnamese pilots were training in FLOGGER aircraft in the Soviet Union in December 1981.<sup>1</sup> Future deliveries from the Soviet Union could also include the highly sophisticated HIND D gunship. One Type E HIND fuselage shipping container was observed at Da Nang Airfield in March 1981; the fuselage container and a component container were on the apron in the helicopter assembly area, and the containers remained at the airfield through April 1982. In the past, only D-model HIND aircraft have been observed in conjunction with the Type E container.

**REFERENCES**

**IMAGERY**

(S/WN) All imagery acquired from October 1975 through June 1982 was used in the preparation of this report.

**DOCUMENT**

1. COMIPAC. IPAC Daily Intelligence Summary 252-81 (U) *Vietnam: Soviet MIG-23's Reported In-Country* (S) 300150Z Dec 81 (SECRET [redacted])

\*Extracted information is classified CONFIDENTIAL

(S) Comments and queries regarding this report are welcome. They may be directed to [redacted]  
Asian Forces Division, Imagery Exploitation Group, NPIC, [redacted]

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